

[00001] Present invention has as an aim a composition thickened for the make-up of the skin or the superficial body growths, containing an aqueous polymer dispersion, l' d' use; such a composition for the make-up of the skin and the superficial body growths, thus qu' a process of make-up of the latter. The composition and the process of make-up according to l' invention are more particularly intended for the make-up of the skin of the face, including the lips and the eyelids, of the body, and the superficial body growths such as the lashes, the eyebrows, the hair and the nails d' human beings. L' invention also relates to a product of make-up including/understanding this composition.

[00002] The products of make-up are usually employed to bring color, to emphasize certain parts of the skin or superficial body growths, or even to get an aspect shining, chechmate, glossed with the skin or the superficial body growths. These products are usually applied in the form d' a uniform thin layer. It is known requests EP-A-143480, FR-A-2399238, and EP-A-648485 of the fluid compositions of varnish-with-nails including/understanding an aqueous dispersion of film forming polymer particles.

[00003] These fluid compositions are generally conditioned in a bottle of glass provided d' a body d' application such qu' a brush. L' body d' application allows d' to apply the fluid composition in the form d' a uniform thin layer. With these fluid compositions, it is often necessary d' to apply two layers of product to obtain a film covering l' perfectly; nail, c' be-with-to say a film which does not make it possible to see l' nail through film. Moreover, it is possible to take too much product with the brush if this last n' is not well égouté and l' surplus of product harms the good application of the composition on l' nail.

[00004] With l' evolution of the mode, the consumers, more demanding, seek new products of make-up, such as for example of the products presented in a new type of conditioning. Thus, if l' one wants to present a composition of nail varnish in a conditioning in the shape of tube, the known fluid formulas to date do not agree. The composition must be thickened to be able to be distributed correctly with the tube.

[00005] One thus seeks for this particular conditioning a sufficiently thick composition and which has good properties d' spreading out, in particular with l' d' helps; a brush, to form a thin layer of make-up. Moreover, the composition owes presented a good storage stability. The purpose of the present invention is thus to propose a thickened composition of make-up

which can spread out easily over the skin and the superficial body growths and getting a correct film of make-up.

[00006] The applicant noted that such a composition of make-up could be obtained with the help of an association of two thickening agents and having a particular high viscosity. A product of this viscosity can be taken and proportioned easily, contrary to a fluid product. In a more precise way, the present invention has as an aim a cosmetic composition of make-up including/understanding an aqueous dispersion of film forming polymer particles, characterized by the fact that the composition includes/understands at least an associative polyurethane and at least a silicate including/understanding at least a cation, the polyurethane and the silicate being present in an effective quantity so that the composition has a viscosity η' at least 1 Pa. S, measured at 25 °C, the number of revolutions of 20 turns/min.

[00007] Another object of the invention is a process of make-up of the skin and/or superficial body growths consisting in applying to the skin and/or the superficial body growths a composition such as previously defined. In practice, the composition according to the invention advantageously has a viscosity, measured at 25 °C and a number of revolutions of 20 turns/minute going from 1 Pa. S with 5 Pa. S (10 to 50 Poises), and better from 2 to 4 Pa. S (20 to 40 Poises). Viscosity is measured with a viscometer BROOKFIELD VD2+ equipped with a mobile N 3, measurement being carried out at the end of 10 minutes of rotation of the mobile (time to the end of which one observes a stabilization of viscosity and number of revolutions of the mobile).

[00008] Associative polyurethanes are nonionic copolymers sequences comprising in the chain, at the same time absorbent sequences of generally polyoxyethylene nature and hydrophobic sequences which can be aliphatic sequences only and/or sequences cycloaliphatic and/or aromatic. In particular, these polymers comprise at least two hydrocarbon lipophilic chains, having of C6 with C30 atoms of carbon, separated by an absorbent sequence, the hydrocarbon chains can be hanging chains or chains in end of absorbent sequence. In particular, it is possible that one or more hanging chains are envisaged. Moreover, the polymer can comprise, a hydrocarbon chain with an end or the two ends of an absorbent sequence. The polymers can be sequences in the form of tribloc or multibloc. The hydrophobic sequences can thus be at each end of the chain (by example: copolymer tribloc with absorbent central sequence) or distributed at the same time at the ends and in the chain (multisequenced).

copolymer for example). The polymers can be also in grafts or star. Preferably, the polymers are copolymers triblocs whose absorbent sequence is a polyoxyéthylénée chain comprising from 50 to 1.000 oxyéthylénés groupings. In general the associative polyurethanes comprise a bond urethan between the absorbent sequences, d' where l' origin of the name.

[00009] With title d' example, of associative polymers usable in l' invention, one can quote polymer C16-OE120-C16 sold by company HULS (under the name Sérad FX1100, molecule with function urethan and average molecular weight in weight of 1300), OE being a oxyéthyléné reason. Like associative polymer, one can also use Rhéolate 205 with function urea sold by company RHEOX or Rhéolate 208 or 204. These associative polyurethanes are sold in pure form. Product DW 1206B from RHOM & HAAS with chain alkyl in C20 and bond urethan, sold at 20% out of matter dries in l' water, can also be used.

[00010] One can also use solutions or dispersions of these polymers in particular in l' water or in medium hydroalcoholic. With title d' example, such polymers one can quote, Sérad FX1010, Sérad FX1035 and Sérad 1070 sold by company HULS, Rhéolate 255, Rhéolate 278 and Rhéolate 244 sold by company RHEOX. One can also use product DW 1206F and the DW 1206J, like l' Acrysol RM 184 or l' Acrysol 44 of company RHOM & HAAS, or even Borchigel LW 44 of company BORCHERS. Polymers usable in l' invention are in particular those described in l' article of G. Fonnum, J. Bakke and Fk. Hansen - Colloid Polym. Sci 271,380.389 (1993).

[00011] The composition according to l' invention contains one or more associative polyurethanes in a sufficient quantity to obtain a composition having viscosity indicated previously. Advantageously, the associative polyurethane can be present in a quantity going from 0,1 to 5% in weight, compared to the total weight of the composition, and better from 0,3% to 2% in weight. Silicate present in the composition according to l' invention can contain a cation chosen among the calcium cations, of magnesium, d' aluminium, of sodium, potassium, lithium and their mixtures.

[0012] Like silicates usable in l' invention, one can quote magnesium and sodium silicates and in particular silicate of sodium, lithium and magnesium like the market products by the Laporte company under the name Laponite XLG, Laponite RD, Laponite RDS, the magnesium silicates and d' aluminium in particular hydrated like produces it sold by the company Vanderbilt Company under the name ultra Veegum, which is

synthetic clays smectite or the calcium silicates and in particular that in synthetic form sold by # company under the name of Microphone-concealment C. The silicate can be present in the composition according to l' invention in an effective quantity to stabilize the composition and in particular in a content going from 0,3% to 9% of weight, compared to the total weight of the composition, and preferably from 0,8% to 3% in weight

[00013] According to a particular mode of realization according to l' invention, the associative polyurethane and the silicate can be present in the composition according to a ponderal report/ratio associative polyurethane/going silicate from 0,1 to 2 and better going from 0,5 to 1,2. In the present request, one understands by " polymer filmogène" , a polymer ready to only form with him or in d' presence; an auxiliary agent of filmification, an isolable film. Among film forming polymers usable in the composition of this invention, one can quote synthetic polymers, of ridicalizing type or type condensation polymer, the polymers d' natural origin, and their mixtures

[0014]. By ridicalizing film forming polymer, one understands a polymer obtained by polymerization of monomers with in particular ethylene non-saturation, each monomer being likely of s' homopolymériser (with l' opposite of condensation polymers). The film forming polymers of ridicalizing type can be in particular polymers, or copolymers, vinyl, in particular of acrylic polymers. The vinyl film forming polymers can result from the polymerization of monomers with ethylene non-saturation having at least an acid grouping and/or esters of these acid monomers and/or amides of these acid monomers. One uses anion ridicalizing film forming polymers preferably, c' is with-to say monomers having at least a monomer to acid grouping. Like monomer carrying acid grouping, one can use unsaturated carboxylic acids [alpha], S-ethylene such as l' acrylic acid, l' acid méthacry- lic, l' crotonic acid, l' maleic acid, l' itaconic acid. L' preferably is used; acid (méth) acrylic and l' crotonic acid, and more preferentially l' acid (méth) acrylic. The acid esters of monomers are advantageously selected among esters of l' acid (méth) acrylic (still called them (méth) acrylates), in particular of (méth) acrylates d' alkyl, in particular d' alkyl in C1-C20, preferably in C1-C8, of (méth) acrylates d' aryl, in particular d' aryl in C6-C10, of (méth) acrylates d' hydroxyalkyle, in particular d' hydroxyalkyle in C2-C6. Among (méth) acrylates d' alkyl, one can quote methyl the methacrylate, the methacrylate d' ethyl, the methacrylate of butyl, the methacrylate d' isobutyl, the methacrylate d' éthyl-2 hexyl, the methacrylate of lauryle. Among (méth) acrylates d' hydroxyalkyle, one can quote l' acrylate d' hydroxyéthyle, l' acrylate of 2-hydroxypropyle, the methacrylate d' hydroxyéthyle, the methacrylate of 2-

hydroxypropyle. Among (méth) acrylates d' aryl, one can quote l' benzyl acrylate and l' phenyl acrylate. Esters of l' acid (méth) acrylic particularly preferred are them (méth) acrylates d' alkyl.

[0015] According to the present invention, the grouping alkyl of esters can be either fluorinated, or perfluoré, c' be-with-to say qu' a part or totality of the atoms d' hydrogen of the grouping alkyl are substituted by fluorine atoms. Like amides of the acid monomers, one can for example quote to them (méth) acrylamides, and in particular N-alkyl (méth) acrylamides, in particular d' alkyl in C2-C12' Among N-alkyl (méth) acrylamides, one can quote N-éthyl acrylamide, N-t-butyl acrylamide and N-t-octyl acrylamide. The film forming vinyl polymers can also result from l' homopolymerisation or of the copolymerization of monomers chosen among vinyl esters and the styrenic monomers. In particular, these monomers can be polymerized with acid monomers and/or their esters and/or their amides, such as those mentioned previously. Like d' example; vinyl esters, one can quote l' vinyl acetate, the vinyl néodécanoate, the vinyl pivalate, the vinyl benzoate and the t-butyl benzoate of vinyl.

[0016] Like styrenic monomers, one can quote styrene and l' alpha-methyl styrene. The list of the monomers given n' is not restrictive and it is possible d' to use any known monomer of l' specialist of the profession being included in categories of the acrylic and vinyl monomers (including the monomers modified by a siliconée chain).

[0017] Like film forming acrylic polymer usable according to l' invention, one can quote those sold under denominations NEOCRYL XK-90, NEOCRYL A-1070, NEOCRYL A-1090#, NEOCRYL BT-62#, NEOCRYL A-1079#, NEOCRYL Has 523# by company ZENECA, DOW LATEX 432# by company DOW CHEMICAL. Among condensation polymers usable like film forming polymer, one can quote polyurethans, polyesters, the polyesters amides, polyesters with fatty chain, polyamides, and the resins époxyesters. The polyesters can be obtained, in a known way, by polycondensation d' acids dicarboxylic with polyols, in particular of the diols. L' acid dicarboxylic can be aliphatic, alicyclic or aromatic. One can quote like example of such acids: l' oxalic acid, l' malonic acid, l' acid dimethylmalonic, l' succinic acid, l' glutaric acid, l' adipic acid, l' acid pimelic, l' acid 2,2-dimethylglutaric, l' acid azélaïque, l' suberic acid, l' acid sebacic, l' fumaric acid, l' maleic acid, l' itaconic acid, l' phtalic acid, l' acid dodécanedioïque, l' acid 1,3-cyclohexanedicarboxylic, l' acid 1,4-cyclohexa-nedicarboxylic, l' isophtalic acid, l' terephtalic acid, l' acid 2,5-norborane dicarboxylic, l' diglycolic acid, l' acid thiodipropionic, l' acid 2,5-

naphthalenedicarboxylic, l' acid 2,6-naphtha-lènedicarboxylique. These monomers acid dicarboxylic can be used only or in combination d' at least two monomers acid dicarboxylic. Among these monomers, one chooses l' preferentially; phtalic acid, l' isophtalic acid, l' terephtalic acid. The diol can be selected among the aliphatic, alicyclic, aromatic diols.

[0018] One preferably uses a selected diol among: l' ethylene glycol, the diethylene glycol, the triethylene glycol, the 1,3-propanediol, cyclohexane diméthanol, the 4-butanediol. Like other polyols, one can use the glycerol, pentaerythritol, the sorbitol, the triméthylol propane. The polyesters amides can be obtained in a way similar to polyesters, by diacid polycondensation with diamines or amino alcohols. Like diamine, one can use l' éthylenediamine, l' hexaméthylènediamine, the méta- or para-phénylènediamine. Like aminoalcool, one can use the monoéthanolamine. The polyester can moreover include/understand at least a monomer carrying at least a grouping - S03M, with M representing an atom d' hydrogen, an ion ammonium NH_4^+ or a metal ion, such as for example an ion Na^+ , Li^+ , K^+ , Mg^{2+} , Ca^{2+} , Cu^{2+} , Fe^{2+} , Fe^{3+} . One can use a bifunctional aromatic monomer in particular comprising such a grouping - S03M.

[0019] The aromatic nucleus of the bearing bifunctional aromatic monomer moreover a grouping - S03M as described above can be selected for example among the cores benzene, naphthalene, anthracene, diphényl, oxydiphényl, sulfonyldiphényl, méthylènediphényl. One can quote like example of bearing bifunctional aromatic monomer moreover a grouping - S03M: l' acid sulfoisophtalic, l' acid sulfoterephtalic, l' acid sulfoptalic, l' acid 4-sulfonaphtalene-2,7dicarboxylic.

[00020] One prefers to use in the object compositions of l' invention of copolymers at base d' isophtalate/sulfoisophtalate, and more particularly of copolymers obtained by condensation of di-ethyleneglycol, cyclohexane diméthanol, isophtalic acid, acid sulfoisophtalic. Such polymers are sold for example under the name of mark Eastman AQ by the company Eastman Chemical Products. The polymers d' natural origin, possibly modified, can be selected among the resin shellac, the gum of sandaraque, the dammars, the elemis, copals, the insoluble cellulose polymers in l' water, and their mixtures. One can still quote polymers resulting from radicalizing polymerization d' one or more radicalizing monomers with l' interior and/or partially on the surface, of preexistent particles d' at least a polymer chosen in the group consisted the polyurethanes, polyurées, polyesters, the polyesteramides and/or alkydes.

[0021] These polymers are generally called polymeric hybrids. Dispersion including/understanding one or more film forming polymers can be prepared by l' specialist of the profession on the basis of its general knowledge. The size of the polymer particles in aqueous dispersion can go from 10 to 500 Nm, and is preferably from 20 to 300 Nm.

[0022] The polymer in aqueous dispersion can be present in the composition according to l' invention in an effective quantity to form a film and in particular in a content going from 1% to 60% of weight, preferably from 5% to 45% in matter weight dries of film forming polymers compared to the total weight of the composition.

[0023] To improve the film forming properties of the composition according to l' invention, the composition can contain plasticizing agents and/or agents of coalescence which are well-known of l' specialist of the profession.

[0024] The composition can include/understand an aqueous medium which can be primarily made up d' water or even d' a mixture hydroalcoholic and in particular containing lower monoalcohols in C1-C5. The water content in the composition can go from 30 to 99% in weight, compared to the total weight of the composition, and preferably from 60% to 80% in weight.

[0025] The composition can also include/understand a dye like the pulverulent compounds, for example at a rate of 0,1% to 25% of the total weight of the composition, preferably from 1% to 10% in weight. The pulverulent compounds can be selected among the pigments and/or mother-of-pearl and/or the loads usually used in the compositions of make-up.

[0026] Advantageously, the composition according to l' invention is appropriate well for the setting in #uvre of pulverulent compounds having a higher density or equalizes to 2 kg/m³, and in particular going from 2 to 5 kg/m³ and better from 2,5 to 4 kg/m³.

[0027] L' association d' thickeners makes it possible to prepare a stable composition with these pulverulent compounds, in particular at 45 C for one month. The pigments can be white or coloured, mineral and/or organic, interferential or not. One can quote, among the mineral pigments, titanium the dioxide, possibly treated on the surface, the oxides of zirconium or cerium, as well as chromium or iron oxides, the purple one of manganese, blue overseas, l' hydrate of chromium and ferric blue. Among

the organic pigments, one can quote the carbon black, the pigments of the type D & C, and lacquers containing carmine or cochineal, barium, strontium, calcium, aluminium. The pearly pigments can be selected among the white pearly pigments such as the mica covered with titanium, or d' bismuth oxychloride, pearly pigments coloured such as the mica titanium with iron oxides, the mica titanium with in particular of ferric blue or l' chromium oxide, the mica titanium with an organic pigment of the above mentioned type, guanine as well as the given lustre to pigments at base d' bismuth oxychloride. The pigments can include/understand a well-known coating of l' specialist of the profession. For example, l' coating can be a silicone, a fluorinated compound or polyethylene.

[0028] In addition, the composition according to l' invention can contain additives usually used in the cosmetic compositions, in particular topics. One can quote with title d' d' example; additives them dyes, lacquers, agents anti-UV, conservatives, the surface-active ones, the agents d' spreading out, hydrating perfumes, credits, agents. Of course, l' specialist of the profession will take care to choose this or these possible additives, and/or their quantity, in such a way that the advantageous properties of the composition according to l' invention are not, or substantial does not lie, faded by l' addition considered, and which thus allows d' to obtain a composition with viscosity indicated previously. Because of its viscosity raised, the composition according to l' invention can be conditioned in a device of particular conditioning.

[0029] Another object of l' invention is a product of make-up including/understanding d' a share the composition of make-up as described above, and d' another share a device of particular conditioning of the aforesaid the composition. The device of conditioning for the composition according to l' invention can include/understand a tank, intended to contain the composition of make-up, in communication with an opening of distribution of the composition ready to be closed by a stopper and comprising means of pressure allowing the distribution of the composition through l' opening.

[0030] According to a mode of realization of the device of conditioning, the tank can comprise a flexible wall constituting the means of pressure allowing the distribution of the composition through l' opening of the tank. Such a tank can be in particular a tube with flexible wall. This device of distribution allows d' to easily apply the composition to the skin and/or the superficial body growths in the form of hazel nut, the latter then being able to be spread out over the skin and. /ou superficial body growths with l' d'

helps; an applicator such as a brush, a spatula, an applicator with end foams.

[00033] The composition can also be applied to the skin or the superficial body growths to help; a stencil key set: the composition thus deposited in the hollow parts of the stencil key set preserves its form after the shrinking of the stencil key set, thus giving a make-up on the skin very decorative. L' invention is more illustrated in detail in the following examples.

[00032] The description which follows refers to the figure 1 annexed which presents, out of longitudinal section a product of make-up conforms to L' invention. L' together of conditioning represented on figure 1 is indicated as a whole by reference 1. It consists of a reserve 2 in the shape of tube containing the composition P to be applied provided with an opening of distribution 3 ready to be closed by a stopper. L' opening 3 presents a section S circular whose diameter D can for example go from 0,1 mm to 10 mm, and in particular of 0,8 mm to 2 mm. Tube 2 is provided with a flexible wall 4.

[00034] To apply the composition with the tube, one exerts a pressure on wall 4 with the help of the fingers so that the composition contained in the tube is expelled of tank 2 through the opening of distribution 3. Thus, flexible wall 4 of tube 2 constitutes a means of pressure allowing the distribution of the composition P through the opening 3 of distribution. With this device of conditioning; the composition P is distributed in the form of hazel nut or of pearl.

[00035] Example 1: One prepared, by simple mixture with room temperature, a varnish in the form of cream for the make-up for the nails having the following composition: - aqueous dispersion of styrene copolymer/acrylate (JONCRYL SCX 82-11 de JOHNSON) with 42,8% of dry matters 28, G MY - associative Polyurethane (BORCHIGEL LW 44 of BORCHERS) with 50% in L' water 1 G MY - sodium and magnesium Silicate (Laponite XLG of company LAPORTE) 1 G - Plasticizing 3 G - Agent of coalescence 2 G - Silicone - titanium Mica-oxide - brown iron oxide (density 3 kg/m³) 3 G - Ethanol 4,8 G - Conservatives qs - Water qsp 100 G the composition has a viscosity of 3,5 Pa. S (35 poises) measured at 25 C, L' helps of BROOKFIELD VD2+, equipped with mobile N 3, at a number of revolutions of 20 turns/min (measurement taken after 10 minutes of rotation).

[0036] The composition is perfectly stable during 1 month at 45 C. The composition was conditioned in a tube as described on figure 1. The composition was deposited on the nails then spread out over those with l' d' helps; a brush. One thus obtained varnish-with-nails shining and having a good behaviour. In addition, qu' was noted; a composition similar to that of l' example 1 not containing a laponite XLG n' is not stable during 1 month at 45 C: the pigment elutriates.